Amendments to the Claims:

Please amend claims 1, 11 and 16, such that the pending claims read in accordance with the following listing of claims:

1. (Currently amended) A method comprising:

obtaining a difference between an output signal of a signal processing circuitry and an input signal of a pre-equalizing function, wherein said input signal is filtered by said pre-equalizing function and the output signal of said pre-equalizing function is input to said signal processing circuitry;

calculating an approximation of ~~the~~ a gradient of ~~the~~ an expectation of ~~the~~ a square of said difference based on said obtained difference and an approximation of ~~said~~ transmission characteristic; and

updating control values of said pre-equalizing function based on said approximated gradient,

wherein said transmission characteristic of said signal processing circuitry is approximated as a delay function.

2. (Previously Presented) The method according to claim 1, wherein said approximating comprises calculating an approximation of a least mean square gradient vector of said difference.

3. (Previously Presented) The method according to claim 2, wherein said gradient vector is calculated from a partial differential equation of a system cost function.

4. (Previously Presented) The method according to claim 1, wherein said difference is obtained by comparing signal envelopes of said output and input signals.

5. (Previously Presented) The method according to claim 4, wherein said input signal is a digital signal and said output signal is an analog signal.

6. (Previously Presented) The method according to claim 1, wherein said control values are coefficients of an adaptive digital filter.

7. Cancelled.

8. (Previously Presented) The method according to claim 1, wherein the delay of said delay function corresponds to the position of the maximum analog filter peak of said transmission characteristic.

9. (Previously Presented) The method according to claim 8, wherein said gradient vector is calculated using the following equation:

$$\nabla\{E\} = -2e[k] \cdot \underline{d}[k - \tau],$$

wherein

$\nabla\{E\}$ denotes said gradient vector,

$e[k]$ denotes said obtained difference, and

$\underline{d}[k - \tau]$ denotes a vector representation of said input signal assessed by said delay approximation of said transmission characteristic.

10. (Previously Presented) The method according to claim 9, wherein filter coefficients are updated in said updating step based on the following equation:

$$w[k + 1] = w[k] + \mu e[k] \cdot d[k - \tau],$$

wherein

$\underline{w}[k + 1]$ denotes a vector representation of updated filter coefficients,

$\underline{w}[k]$ denotes a vector representation of current filter coefficients, and

μ denotes a predetermined proportionality factor.

11. (Currently amended) An apparatus comprising:

a comparison circuit for obtaining a difference between an output signal of a signal processing circuitry and an input signal of a pre-equalizer, wherein said input signal is filtered by said pre-equalizer and the output signal of said pre-equalizer is input to said signal processing circuitry;

an approximation circuit for calculating an approximation of ~~the~~ a gradient of ~~the~~ an expectation of ~~the~~ a square of said difference based on said obtained difference and an approximation of ~~said~~ transmission characteristic; and

an updating circuit for obtaining control values supplied to said pre-equalizer, based on said approximated gradient,

wherein said approximation circuit is configured to approximate said transmission characteristic as a delay function.

12. (Previously Presented) The apparatus according to claim 11, wherein said comparison circuitry is configured to compare said input and output signals based on their envelopes.

13. (Previously Presented) The apparatus according to claim 11, wherein said approximation circuit is configured to approximate said gradient by using a least mean square approximation function.

14. (Previously Presented) The apparatus according to claim 11, wherein said signal processing circuitry is a direct conversion or heterodyne transmitter architecture.

15. (Previously Presented) The apparatus according to claim 11, wherein said apparatus comprises a digital pre-equalizer.

16. (Currently amended) An apparatus comprising:

comparing means for obtaining a difference between an output signal of ~~said~~ signal processing circuitry and an input signal of a pre-equalizing means, wherein said input signal is filtered by said pre-equalizing means and the output signal of said pre-equalizing means is input to said signal processing circuit;

approximation means for calculating an approximation of the gradient of the expectation of the square of said difference based on said obtained difference and an approximation of ~~said~~ transmission characteristic; and

updating means for obtaining control values supplied to said pre-equalizing means, based on said approximated gradient,

wherein said approximation means are configured to approximate said transmission characteristic as a delay function.